1: Science. 1986 May 16;232(4752):854-8.



## Cloning of a cDNA for a T cell-specific serine protease from a cytotoxic T lymphocyte.

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A new serine protease was encoded by a clone isolated from a murine cytotoxic T-lymphocyte complementary DNA library by an RNA-hybridization competition protocol. Complementary transcripts were detected in cytotoxic T lymphocytes, spleen cells from nude mice, a rat natural killer cell leukemia, and in two of eight T-helper clones (both cytotoxic), but not in normal mouse kidney, liver, spleen, or thymus, nor in several tested T- and B-cell tumors. T-cell activation with concanavalin A plus interleukin-2 induced spleen cells to express this gene with kinetics correlating with the acquisition of cytolytic capacity. The nucleotide sequence of this gene encoded an amino acid sequence of approximately 25,700 daltons, with 25 to 35 percent identity to members of the serine protease family. The active site "charge-relay" residues (His57, Asp102, and Ser195 of the chymotrypsin numbering system) are conserved, as well as the trypsin-specific Asp (position 189 in trypsin). A Southern blot analysis indicated that this gene is conserved in humans, mouse, and chicken. This serine protease may have a role in lymphocyte lysis and a "lytic cascade."

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